



# **SoundSafe™ Advanced Pedestrian System**



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## 1 Introduction

Welcome to your purchase of the Novax SoundSafe™ Advanced Pedestrian System. This manual describes the operation and interfacing possibilities with your new product. If you have any questions, please contact us as any of our contact numbers below.

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Email: support@novax.com

Prior to installation, please ensure that you have read the information in the sections below to ensure safe operation and optimal results.

## 2 Terms

aMMU™	Audible Malfunction Monitoring Unit. A Novax articulated acronym for a device that monitors the operation of the Button Stations in a similar manner to the Traffic Controllers MMU.
APS	Advanced Pedestrian System (formerly Audible Pedestrian Signal)
BAT	Button Actuated Timer. A legacy feature of the Novax Model DS100, DS200, DS2000 and DS3000 product lines that provided special features based on an extended pedestrian push button depression.
BIU	Bus Interface Unit (see NEMA TS2 requirement for definition)
Button Station	The combination of a SoundSafe Push Button enclosure and Power Interface Module, used to provide APS and push button functionality.
CIU	Communications Interface Unit. The CIU enables communication between a wireless SoundSet programmer and SoundSafe Button Stations.
CMU	Conflict Monitor Unit. A component of the traffic signal controller that monitors the traffic signal displays and traffic controller for designed operation. (See NEMA TS1 requirement for further detail)
Long Button Press	The pedestrian button depress time exceeds the customer set Button Hold Time. <i>From intersection display select for any button or group: Configuration\Settings Button Hold Time.</i>
MMU	Malfunction Management Unit. The traffic signal conflict monitoring unit with a traffic controller. (See NEMA TS2 requirement for more detail)
NIC	Novax Industries Corporation
PIM	Power Interface Module. The power module that interfaces between the pedestrian signal and SoundSafe pedestrian push button. The component resides in either the pedestrian signal head or a separate enclosure.
Short Button Press	The pedestrian button depress time is less than the customer set Button Hold Time.
TSC	Traffic Signal Controller

### 3 System Overview

The SoundSafe system consists of 4 main components: Button, PIM, CIU, and SoundSet.

The Button and PIM modules are mounted on each pole where an APS button is required. On some locations where two crossing are served by the same pole two buttons (and PIM) may be installed on the same pole.

The **Button** is powered through the low voltage **Power Interface Module (PIM)** which is located in our near the pedestrian signal. The button provides standard pedestrian feedback to the traffic signal controller and vibra-tactile, visual and audible cues to the pedestrian.



The **SoundSet** device is used for configuration of the button and CIU operation (*there are no configurable switches or controls inside the push button or CIU*). The SoundSet includes user-friendly screens to guide the user through the setup with context sensitive help menus. Intersection setup information can be saved in the SoundSet and later backed on your laptop or desk top computer with USB or BlueTooth™ interface.

The **Communications Interface Unit - CIU** provides a communications conduit between the button stations and the SoundSet hand held programmer allowing the technician to stand anywhere in the intersection to program any button or group of buttons. This unit also offers "Wireless Push button" operation by providing virtual pedestrian button feedback to the controller without pedestrian button wiring.



## 3.1 SoundSafe™ Button

The SoundSafe™ button is a revolutionary setup in technology for Accessible Push buttons.

Novax is once again raising the bar in the industry in provide state of the art technology which provides greater flexibility and scalability to allow the City to grow with changes in standards, user needs and demands.

### 3.1.1 Summary of Features

- ❖ 100% compatible with existing Novax VibraWalk™ (VB2) push buttons (field upgradable)
- ❖ State of the art operation and programming (no internal adjustments)
- ❖ Low power 4-wire interface to pedestrian signal (with CIU)
- ❖ No special wiring required between buttons and traffic signal controller
- ❖ Does not interrupt pedestrian button wiring
- ❖ No central controller required in the traffic signal controller
- ❖ Fault tolerant design (no central point of failure that could compromise system)
- ❖ In emergency can be replaced with standard push button
- ❖ Vandal resistant heavy duty design
- ❖ Single entry point security screw
- ❖ Hinged drop down cover
- ❖ Optional overhead speaker with separate audio driver
- ❖ Automatic volume adjustment (separate controls for button and overhead speakers)
- ❖ Load and Save settings (see SoundSet Programmer features 3.4.1)
- ❖ Vibrating arrow can be rotated in any direction (e.g.; left, right, up)
- ❖ Play Order allows you to play a number of different sounds or messages sequentially in any matter you like with fully adjustable period and duration

## 3.2 Power Interface Module (PIM)



The PIM provides low power AC to the push button from the incoming Walk and Don't Walk signals from the traffic signal controller.

Two sets of power connection terminals are provided for ease of connection to the incoming power and signal head. These terminals are marked; DW (Don't Walk), N (AC Neutral), W (Walk), G (Earth Ground)

12 inch & 19 inch signal mounting shown



### 3.3 Communications Interface Unit (CIU)

This device provides the interface between the push button and SoundSet. The CIU is plugged into the traffic signal controller power and placed on a shelf inside the controller cabinet.

The CIU can be used as a temporary device for configuration of the buttons or left in the traffic signal controller for advance function use.

#### 3.3.1 Summary of Features

- ❖ Button Configuration
- ❖ Time of Day Control (of push buttons)
- ❖ Wireless Push Button feature
- ❖ Emergency Vehicle input (plays special message)
- ❖ Train input (plays special message)
- ❖ ALERT input (plays special message) (also can be used for Amber Alert™)

Future capabilities to include:

- ❖ aMMU™ (Audible Malfunction Monitoring Unit)
- ❖ Ethernet (IP based) remote setup, control and upgrades
- ❖ USB expansion support



### 3.4 SoundSet Programmer

The programmer for the SoundSafe™ system is a cornerstone of the technology bringing almost two decades of experience into making accessible signal installation easier and safer. No settable features are in the button or CIU. All features are accessible from the SoundSet.

The SoundSet application runs on a standard SoundSet type device running Microsoft™ Mobile 5.0. This allows us to take advantage of the extensive features provided by the device including WiFi, Bluetooth, and USB for example.



#### 3.4.1 Summary of Features

- ❖ Password security
- ❖ Graphical interface with drop down menus
- ❖ Button sound settings in decibels (dB) for easy reference
- ❖ Standard intersection templates (9 included)
- ❖ Custom intersection templates (create your own and as many as you like)
- ❖ Load and Save intersection settings (apply your own naming convention)
- ❖ Adjust sound settings from anywhere in the intersection for best results
- ❖ Upgrade button or CIU software from anywhere in the intersection (or the convenience of your vehicle)
- ❖ Change button settings for any one, combination or all buttons from anywhere in the intersection
- ❖ Diagnostic screens to help diagnose problem intersections
- ❖ Play on Demand forces the sound you want to adjust to play immediately
- ❖ USB cradle to backup your saved intersection settings and custom templates on your PC.

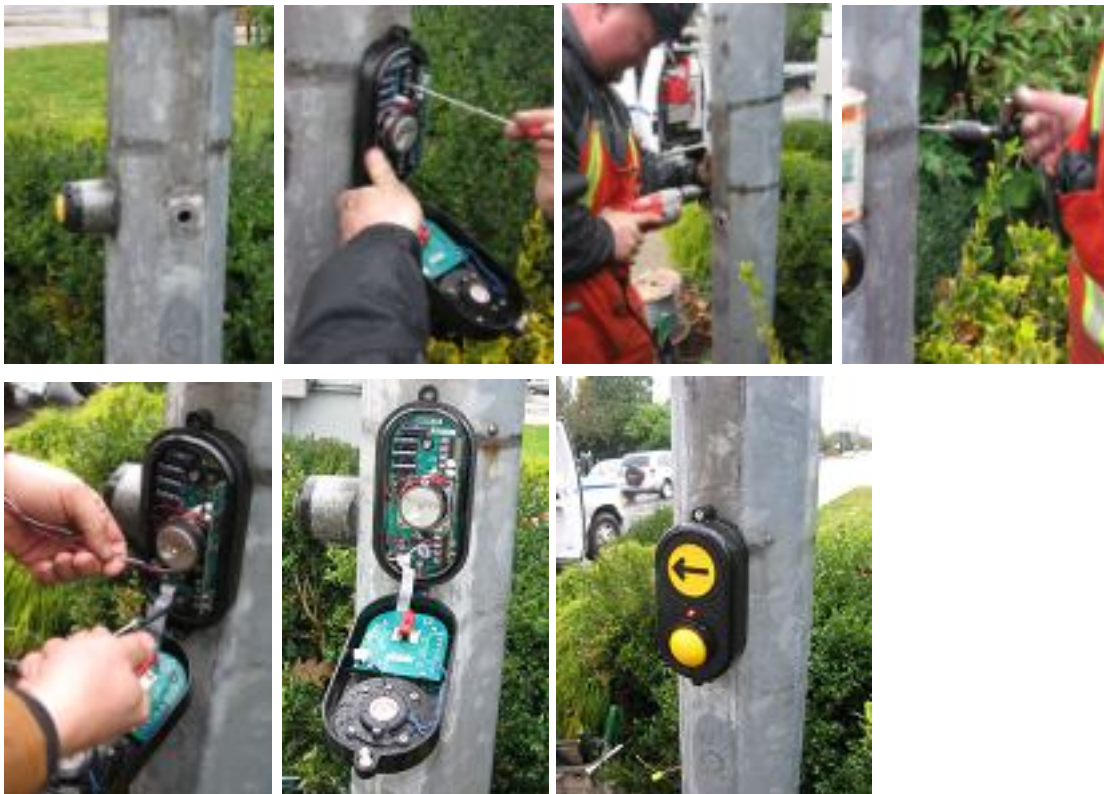


## 4 Quick Start

This section is intended to get you up and running to test one unit on the bench with minimal effort. Please read and follow the directions below.

1. Connect the button, PIM as indicated, in section 6.4, pg. 32, to a traffic controller (or traffic signal simulator box).
2. Connect the CIU to the traffic controller as indicated in reference sec. 6.5, pg. 33
3. Allow the CIU 2 minutes to boot up. Push the red Wireless Access enable button on the front-top of the CIU.
4. Turn on your SoundSet handheld unit and follow Sections 5.1 to 5.5 below to get one or more units operating quickly.
5. If you are a first time user, or the SoundSet unit is new, you will need to call Novax for a temporary access code. This will allow you to enter your own identification and password. This process is for your own protection and security.
6. Password should be changed frequently for best security.

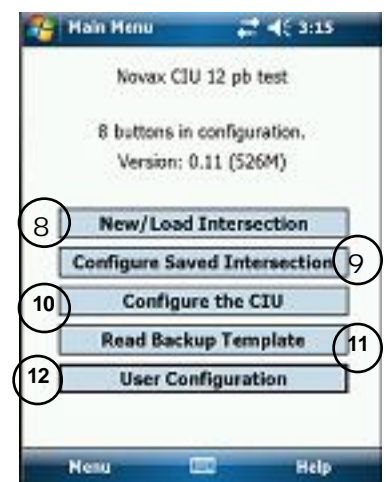
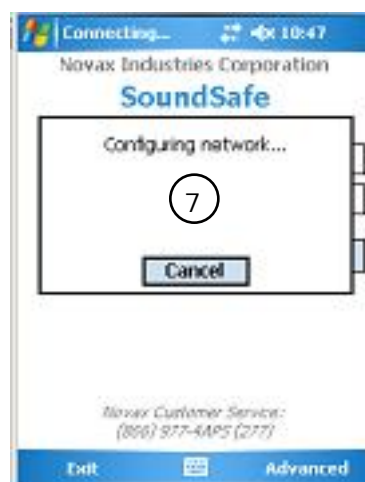
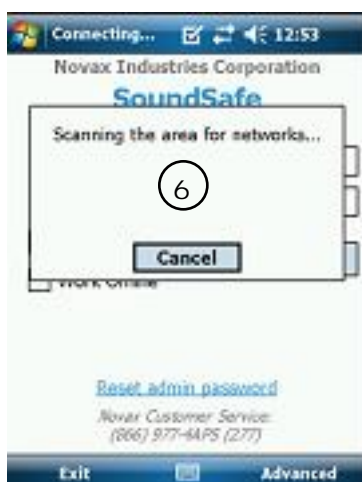
### 4.1 Button Station installation example



## 5 SoundSet Screens

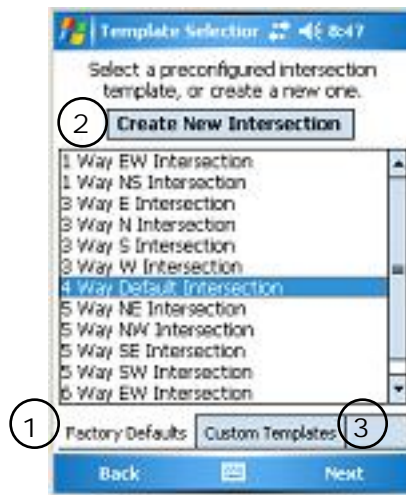
### 5.1 Startup

1. Press **Start**
2. Press **Novax SoundSafe**
3. Enter Username & Password
4. press **Enter**
5. Check the **Work Offline** box only if you plan to work without a CIU
6. Scanning for a CIU will take 10 to 20 seconds.
7. Loading information from any existing buttons.
8. Select **New/Load Template** if new intersection (not previously setup)
9. Select **Configure Saved Templates** to go straight to button configuration (intersection was previously setup)
10. Select **Configure the CIU** to configure the CIU defaults and any I/O requirements for the traffic signal cabinet
11. Select **Read Template from CIU** will read a complete intersection setup from a CIU that was permanently installed in the TSC. (ensure data was backed up, see page ##)
12. **User Configuration**  
see sec. 5.14, pg. 22 for details

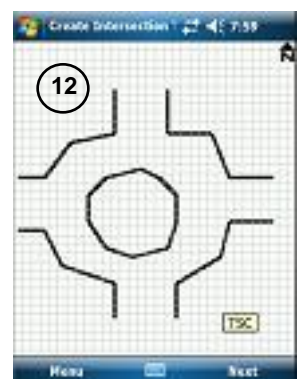
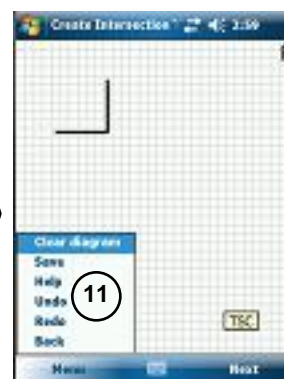
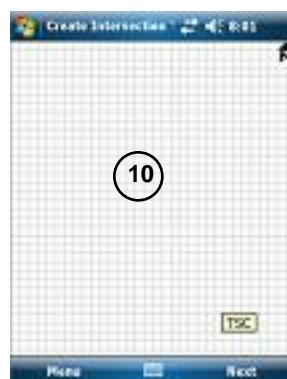
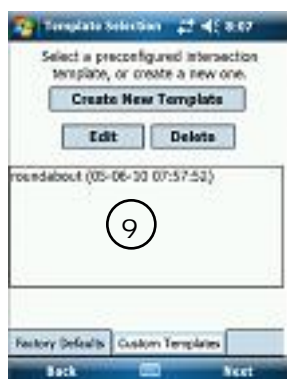
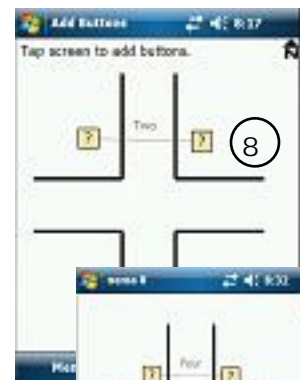
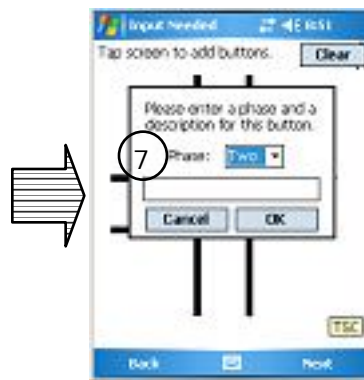
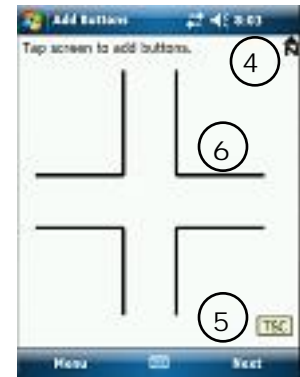


## 5.2 New/Load Template (Intersection Creation)

1. Select a **Factory Default**, or
2. Select **Create New Intersection**, or
3. Select **Custom Templates**
4. North Indicator
5. Traffic controller (TSC icon) drag to suit
6. Tap on the intersection to place an APS button
7. Fill in details (phase should preferably match the TSC for consistency only)
8. Placed buttons
9. Custom Template menu (client saved)
10. Create Intersection screen. Draw intersection by tapping start & end points on grid
11. Edit menu allows you to **Save** diagram, **Undo/Redo** a line, go **Back** to previous page or **Clear Diagram**
12. Sample new drawn intersection. When complete, select Next\Menu\Template\Save Template



Factory Default  
4 Way Intersection





### 5.3 Button Menus

1. Select any single, pair or group of buttons by tapping on the button
2. Tap & hold any of the selected buttons for the button menu

**Move** - relocated button

**Copy** - copy button settings

**Paste** - paste settings on selected button(s)

**Delete** - delete button(s)

**Diagnostics** - go to diagnostic & troubleshooting menu

**Associate** - select to attach a physical button to the selected button (follow popup instructions)

**Configuration** \*

**Sounds** \*

**Relationships** \*

\* see submenu

3. **Template Functions**  
- tap & hold background for menu

**Add APS Button** - add a new APS button to the template

**Select All** - select all buttons

**Select None**

**Delete Selected** - deleted selected buttons

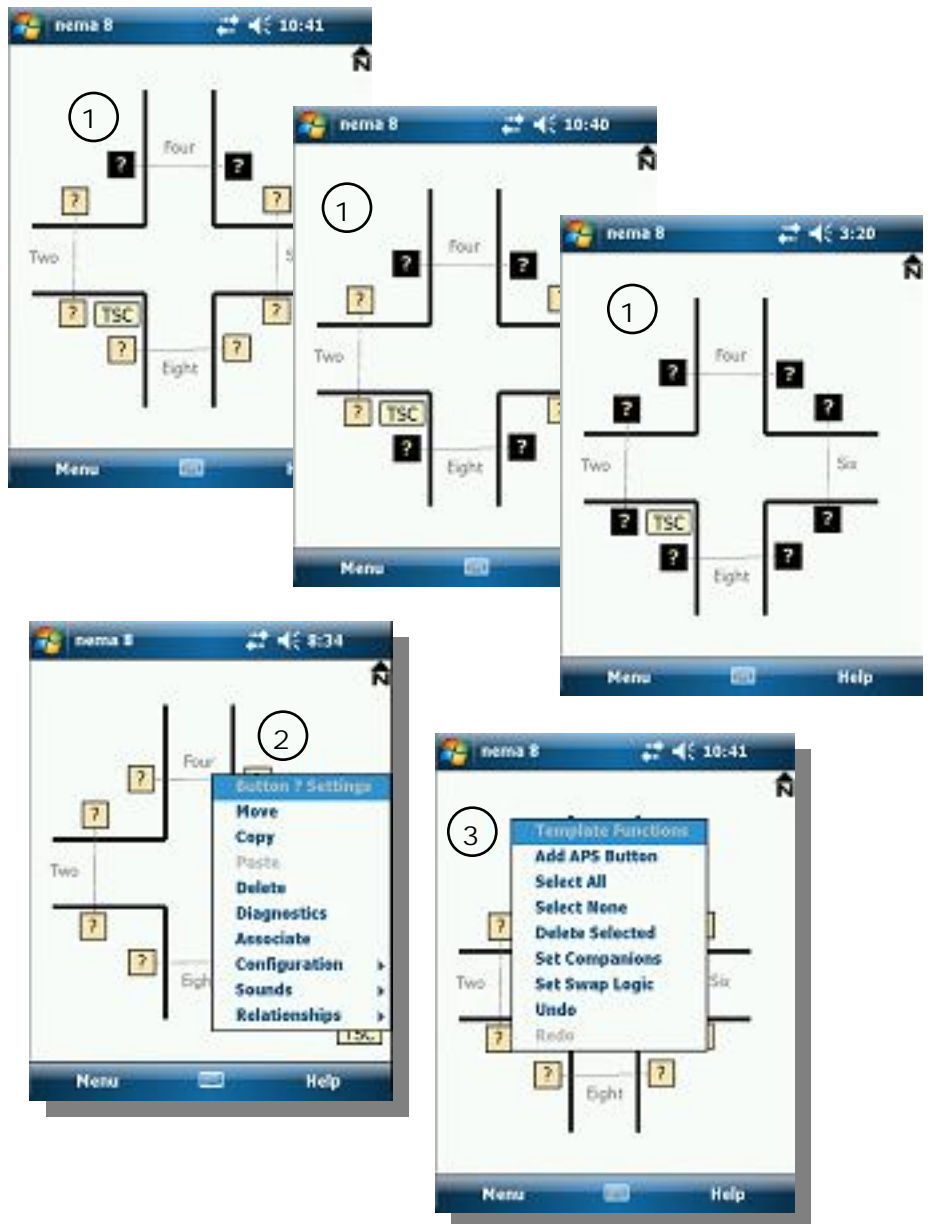
**Set Companions** - associate buttons that are on different phases

**Set Swap Logic** - associate two button/phases that will exchange their Ped signal status.

**IMPORTANT:** refer to sec. 5.12, pg. 21 before using

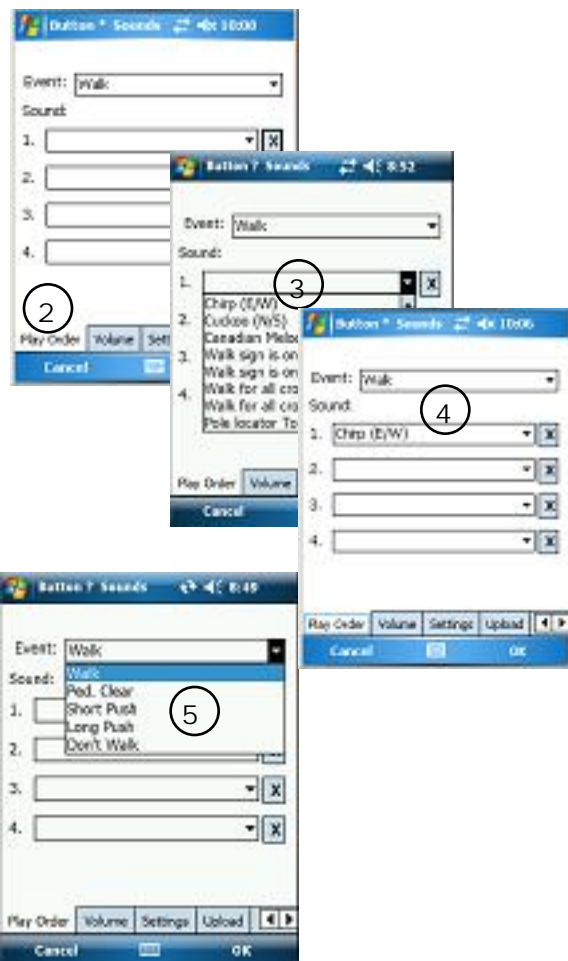
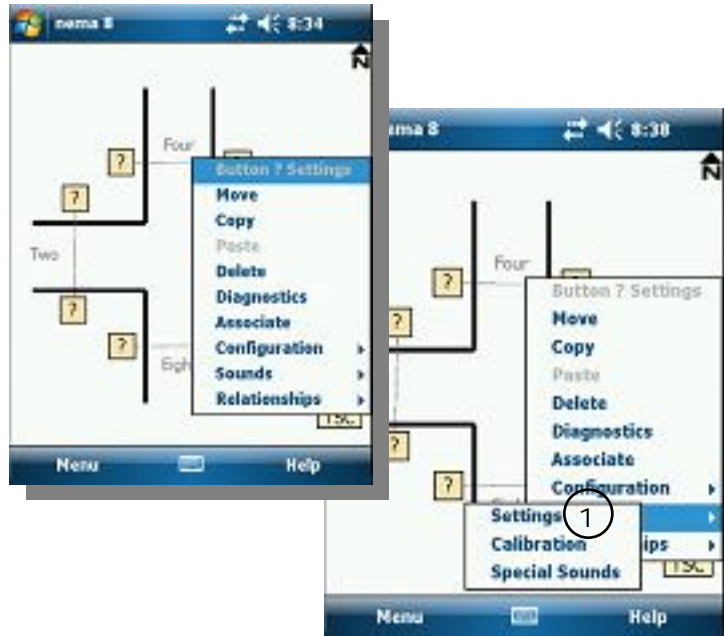
**Undo** - undo last change

**Redo** - redo last change



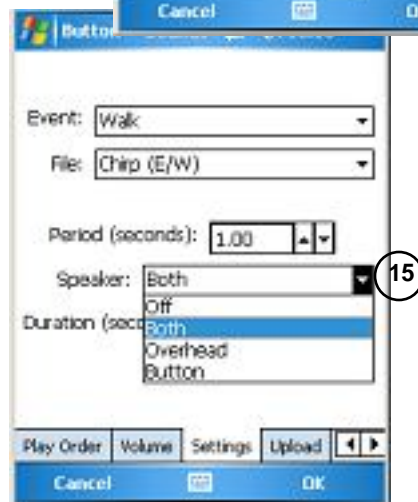
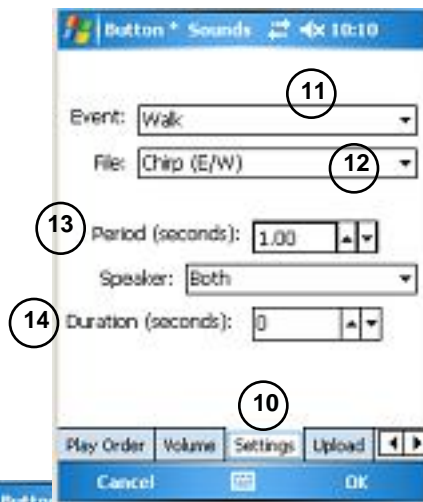
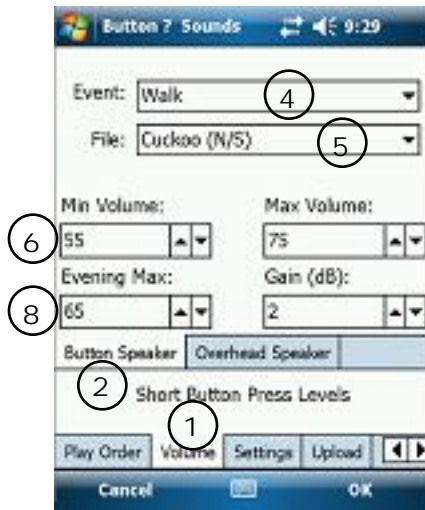
## 5.4 Sounds/Settings Menu – Play Order

1. Select Sounds\Settings
2. **Play Order** menu (Event=Walk)
3. Select first sound (tap drop down arrow)
4. First sound in play order (e.g.; Chirp E/W)
5. Other settable Events
6. Short (button) Push
7. Long (button) Push
8. Pedestrian Clearance playlist
9. Don't Walk playlist



## 5.5 Sounds/Settings Menu – Volume & Settings

1. **Volume** Menu
2. Button Speaker volume & gain settings. This is also the Short Button press level if only one speaker is selected for this event
3. Overhead Speaker volume & gain settings. This is also the Long Button press level if only one speaker is selected for this event
4. Event type (same as Play Order menu)
5. File (displays available sounds from Play Order)
6. Minimum Volume (dB). This sound must not be less than this value
7. Maximum Volume (dB). This sound must not exceed this value
8. Evening Maximum volume (dB). This sound must not exceed this value if in Evening maximum mode. Requires CIU in TSC
9. Gain (dB). Sound pressure the selected sound should play above ambient. Typical: 2-5dB for button sounds and 5-10dB for overhead speaker

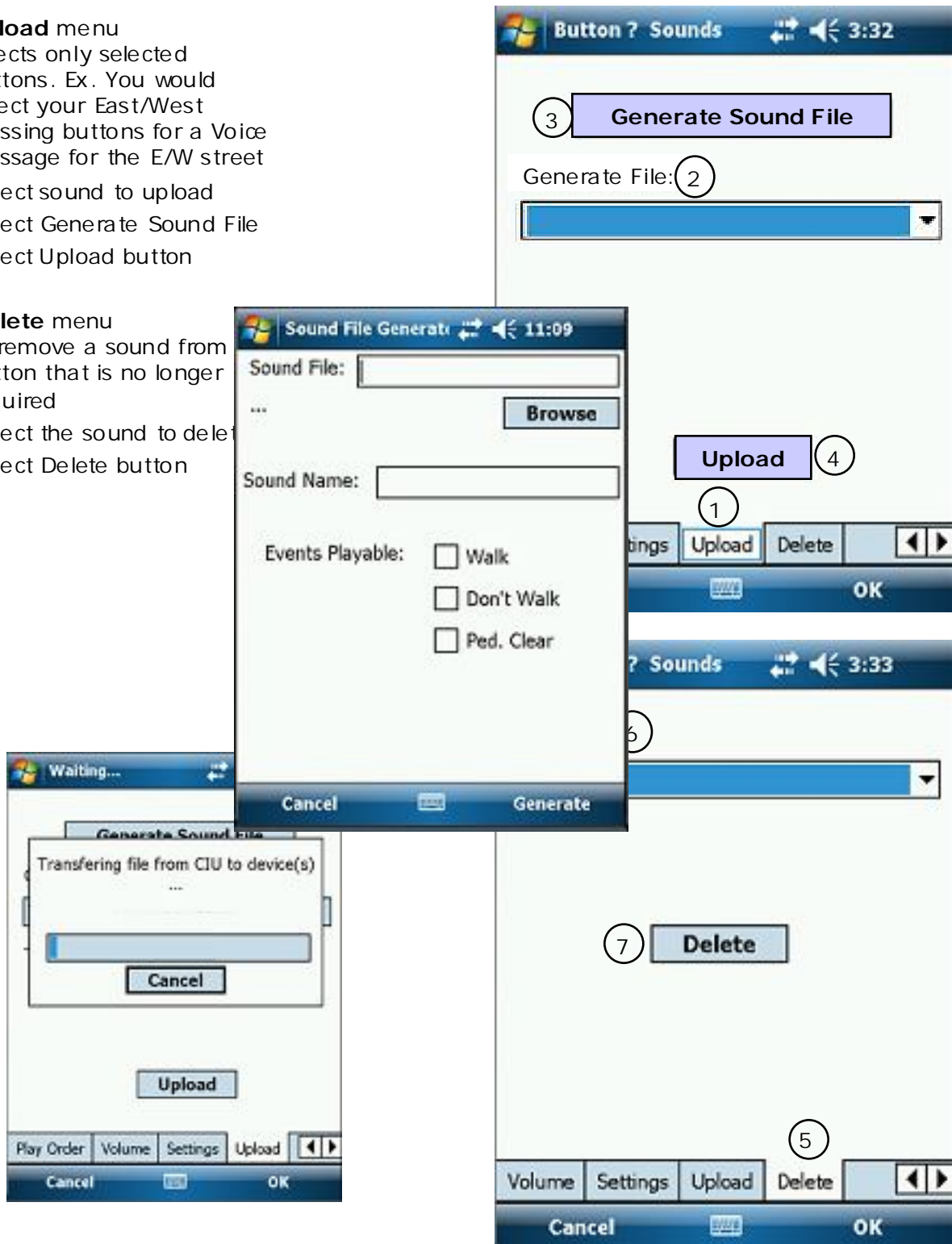


### 10. Settings menu

11. Event type (same as Play Order menu)
12. File (displays available sounds from Play Order)
13. Period is the rate the selected sound will repeat (1=once per second, 2=once every 2 seconds)
14. Duration defines how long the selected sound will play. 0=no time limit. (ex. 5 = maximum play time of 5 seconds before moving to next sound in play order)
15. Speaker selection defines which speaker(s) to play the selected sound.

## 5.6 Sounds/Settings Menu – Upload & Delete Sounds

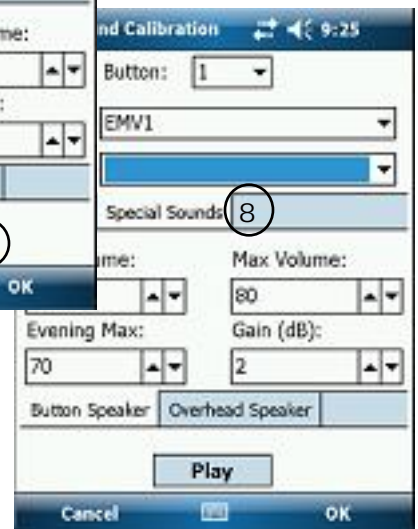
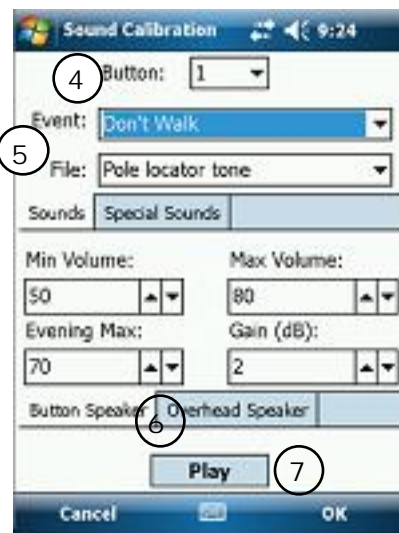
1. **Upload** menu  
affects only selected  
buttons. Ex. You would  
select your East/West  
crossing buttons for a Voice  
message for the E/W street
2. Select sound to upload
3. Select Generate Sound File
4. Select Upload button
5. **Delete** menu  
to remove a sound from  
button that is no longer  
required
6. Select the sound to delete
7. Select Delete button





## 5.7 Sounds Menu - Calibration & Special Sounds

1. **Calibration** menu – this special mode allows sounds to be adjusted “on the fly” without having to wait for the correct signal.
2. **CAUTION:** This menu must only be used by authorized service personnel with extreme care and attention to pedestrians in the intersection that may be affected. Crossing sounds should only be adjusted when there are no pedestrians in or near the crossing area to be adjusted. Playing crossing sounds (e.g.; Walk sounds) when the crossing light is inactive could cause serious injury or death to a pedestrian.
3. After you have read and agreed with the terms you may select the **I Agree** button, otherwise select **I Do Not Agree** to return the intersection menu.
4. **Button** number can be changed from this menu without going back to the intersection menu
5. Select on the **Event** and sound **File** that you wish to play. Only the sounds you have set in the Events/Play Order will be shown.
6. **Button** or **Overhead** speaker can be selected for adjustment
7. The **PLAY** button will tell the selected button to start playing the sound at the settings shown. The volume adjustments are interactive and can be adjusted “on the fly”. There may be a 1 or 2 second delay between adjustment and button response.
8. The **Special Sounds** menu operates the same way, except for accessing the special sounds in the button (e.g.; Train, EMV,



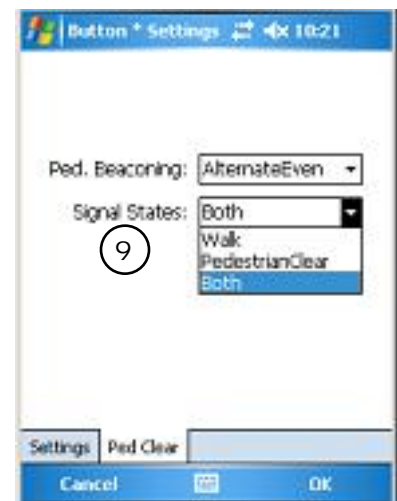
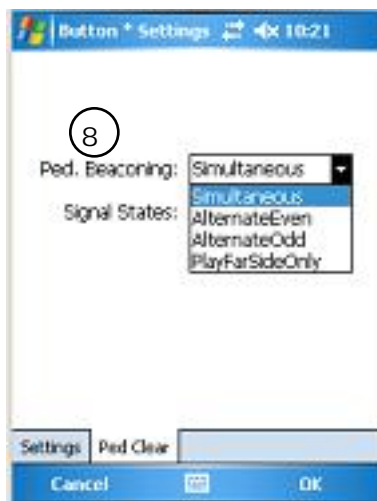
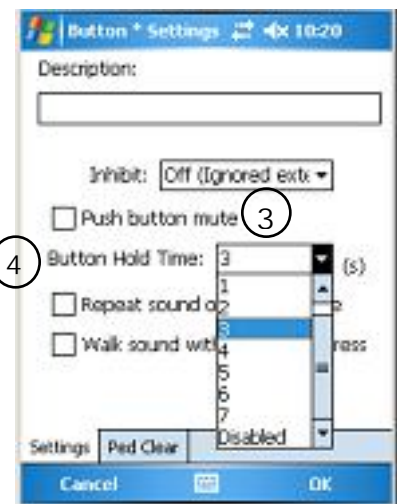


## 5.8 Configuration Menu - Settings

1. **Settings** Menu
2. Inhibit: select speaker(s) to disable on CIU Inhibit request
3. Mute button on demand from other phase (Max Time =60 seconds)
4. Hold time for Long Button request (0-7, disable)
5. Repeat Walk sound for 2<sup>nd</sup> pedestrian cycle (places call to controller automatically)
6. Play crossing sounds whenever crossing signals are active

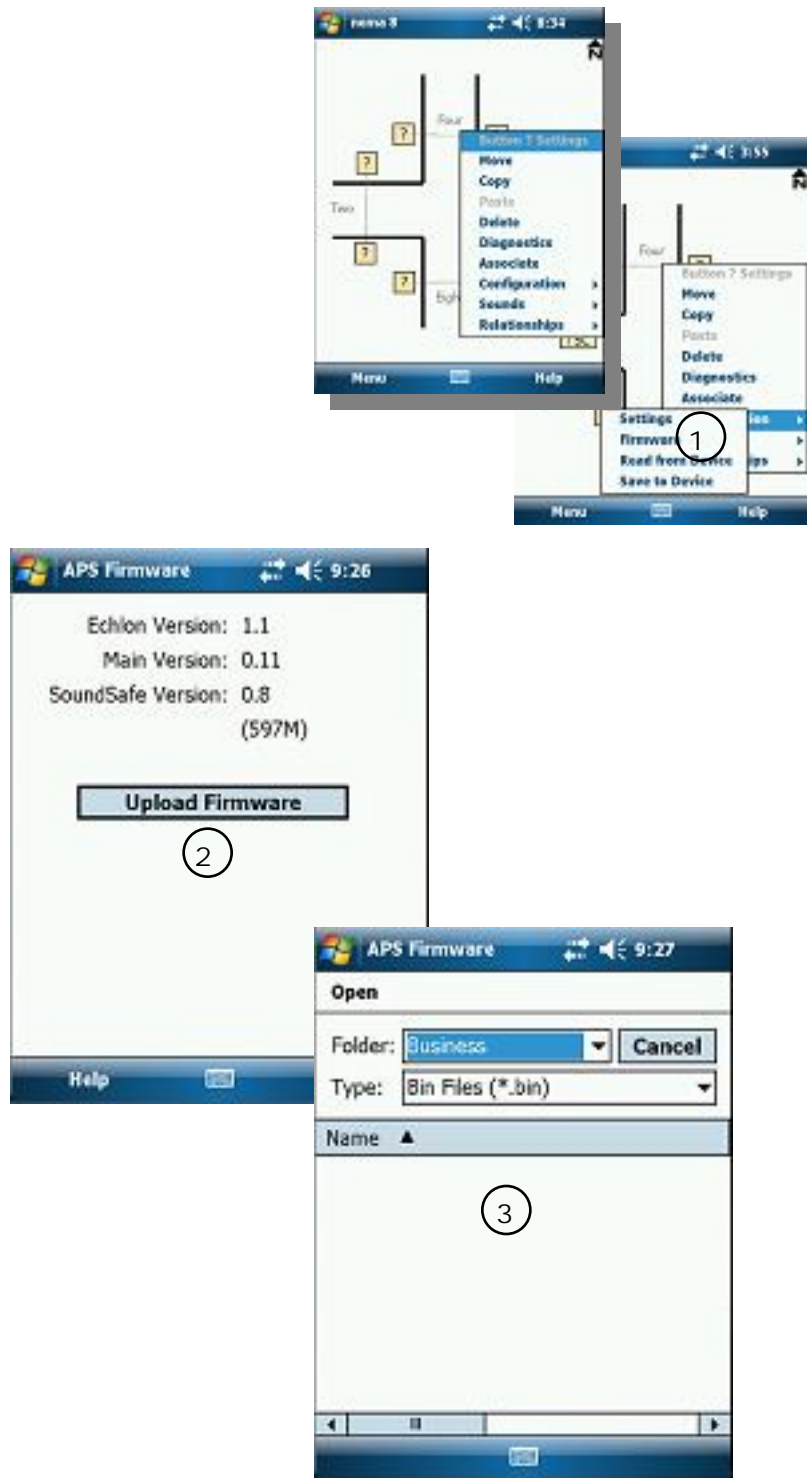


7. **Ped Clear** Menu
8. Select method for sound delivery on the selected phase. Play Far Side Only will play crossing sound on opposing button/beacon.
9. Select which Signal state(s) the Ped Beacons applies to.



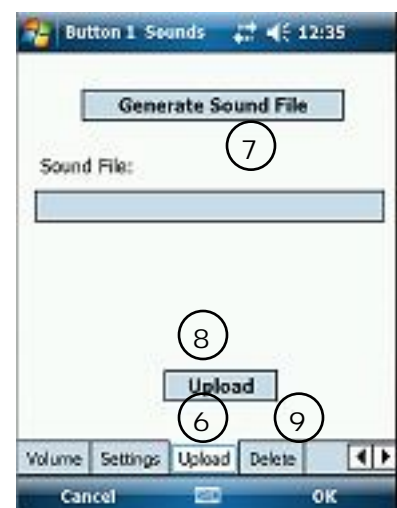
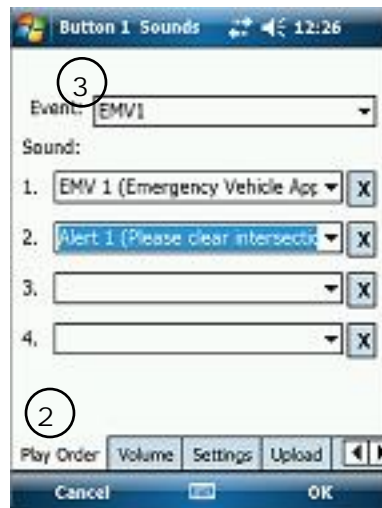
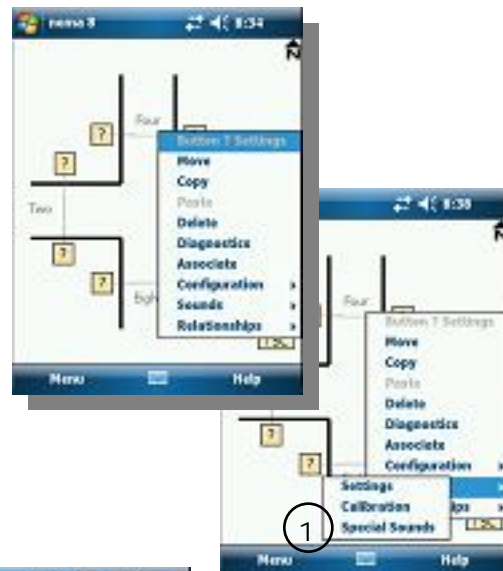
## 5.9 Configuration Menu – Firmware, Read, Save

1. **Firmware** menu – intended for updating the firmware or sound tables on the button station. **All buttons must be selected for this operation unless otherwise directed by the manufacturer**
2. **Upload Firmware** button can be selected for updating the firmware or sound tables in the button
3. Firmware or sound table selection menu. These files will be \*.BIN files supplied by Novax



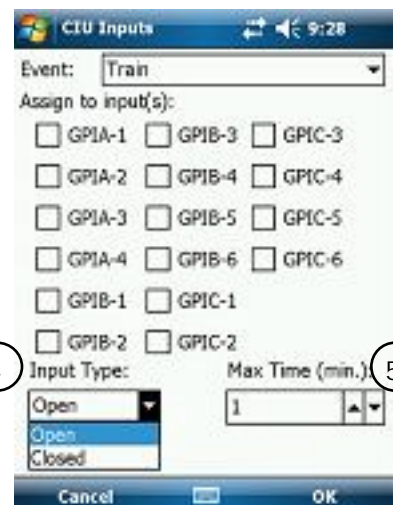
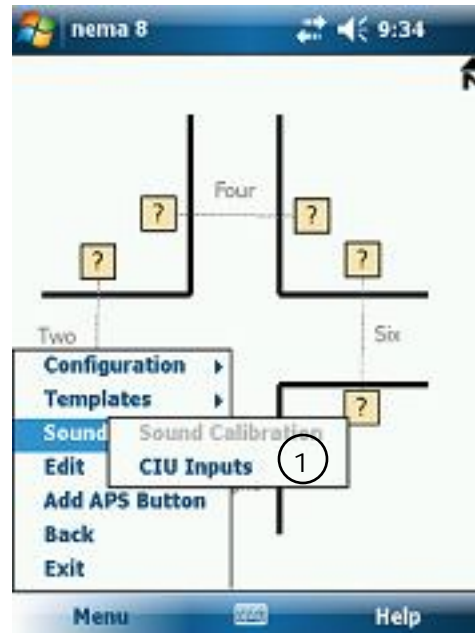
## 5.10 Sounds Menu – Special Sounds

1. **Special Sounds** menu – for creating custom sounds (e.g.; emergency vehicle or train approaching, Alert Warning, Weather warning, Amber Alert, construction warning)
2. **Play Order** menu allows you to assign which order the sounds will play for each event (maximum 4)
3. **Sound Event** – Eleven special event sounds can be created:  
Train (1)  
EMV (1 to 5)  
Alert (1 to 5)  
Event requests originate from the CIU.
4. **Volume** menu (ref to sec. 5.5, pg.13) for operation
5. **Settings** menu (ref to sec. 5.5, pg.13) for operation
6. **Upload** – menu (ref to sec.5.6, pg.14,) for operation
7. **Generate Sound File** – allows you to select a sound file previously loaded onto the SoundSet. File format: 11025Hz rate, 8bit, mono, \*.WAV extension.
8. Select the **UPLOAD** button after the sound file has been generated.
9. **Delete** custom sounds – menu (ref to sec.5.6, pg.14,) for operation



## 5.11 Template Menu - Sounds (CIU Input Assignment & Configuration)

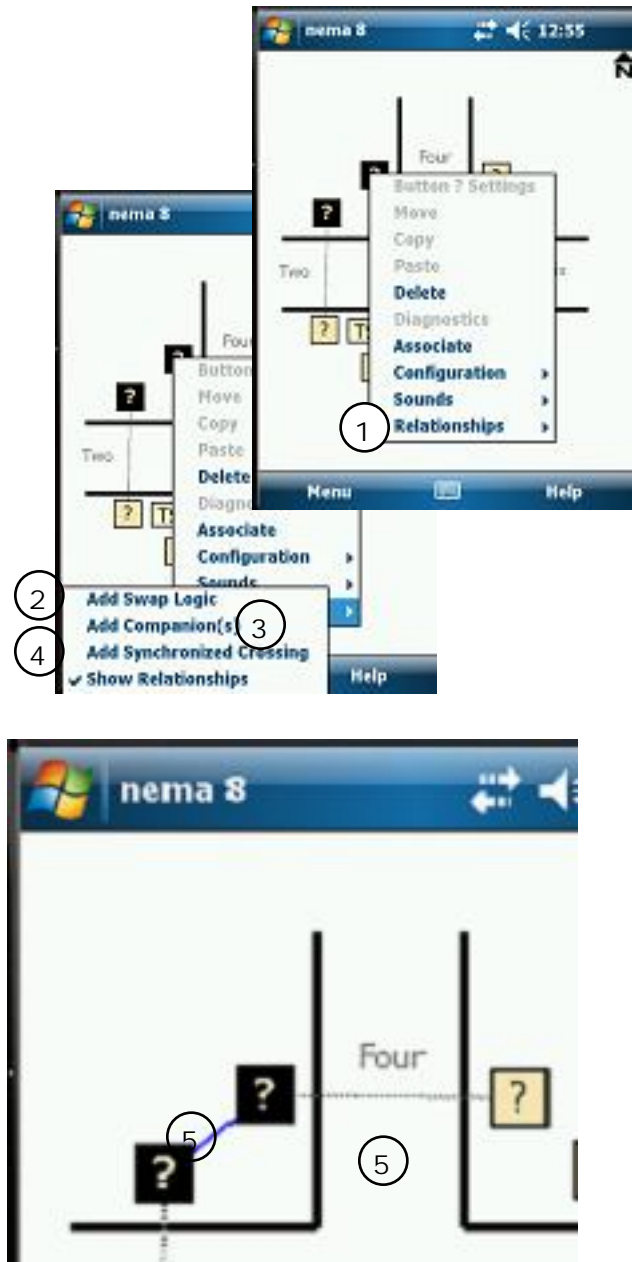
1. **CIU input** menu – this menu is intended to allow the user to specify which input(s) will trigger special events.
2. Events include;
  - **Train**
  - **EMV** (Emergency Vehicle) (5 inputs)
  - **Alert** non-emergency message (5 inputs)
  - **Inhibit** – speaker inhibit request (ref. 5.8)
  - **Evening Control** – to invoke the Evening Max volume setting (ref. 5.5)  
Can be used to raise or lower the maximum volume when the set input(s) is active
3. For each Event select one or more inputs. Inputs are Boolean OR'd
4. Input Type: For each Event select the Open (voltage present) or Closed (voltage absent) type
5. Max Time – adjust the maximum time that the Train/EMV/Alert inputs will be allowed to effect the event. Range: 1-255 minutes. Does not apply to Inhibit or Evening Control events



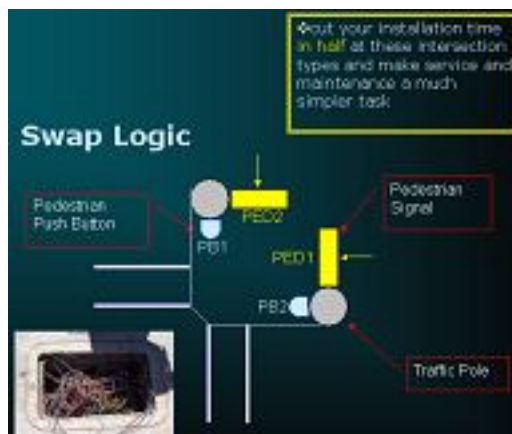


## 5.12 Relationships

1. **Relationships** menu -allows buttons to be able to be combined to share information for certain applications.
2. **Add Swap Logic** - allows two buttons to exchange their Walk/D.Walk signal status. Refer to section below (also sec.5.3, pg.12). Select 2 buttons then Relationships\Add (or Remove) Swap Logic.
3. **Add Companion(s)** – allow two or more buttons to share their push button press requests. This option is active by default for buttons on the same phase. Select 2 or more buttons then Relationships\Add (or Remove) Companion(s).
4. **Add Synchronized Crossing** allows parallel crossings to have their crossing signal (e.g. Walk) start together only (i.e. both crossing must be in Walk).
5. **Show Relationships** – selecting will show relationships between buttons on the intersection template:  
 Swap Logic – Solid Blue line  
 Companion – Dotted Black line  
 Unselecting will turn off these lines.

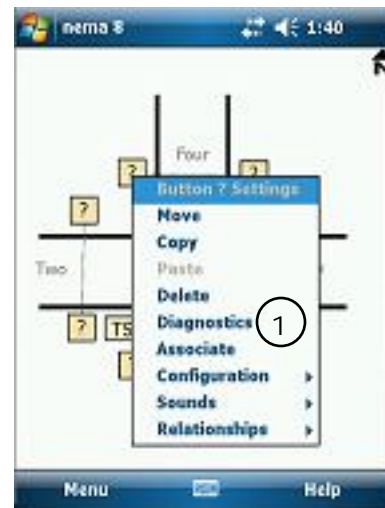


In scenarios like the one shown to the right, you may wire the button directly to the PIM on the same pole. In this menu associate the two buttons on this corner as **Swap Logic** for proper operation.



### 5.13 Diagnostic Menu

1. **Diagnostics** menu item
2. Info menu – displays a summary of the setting for the selected button
3. **Sounds** menu – displays a summary of the sounds programmed into the selected button and associated settings
4. **Communication** menu – allows testing of any one or more communications links from CIU to the selected button. This is generally used if there is poor communication with a button.

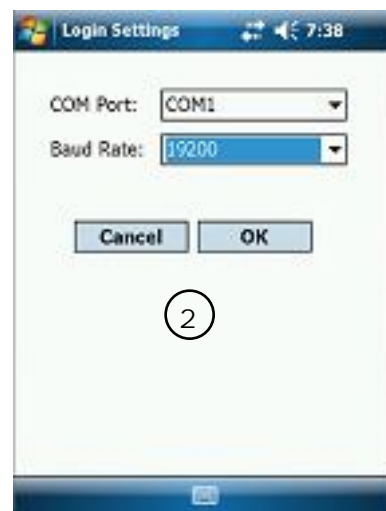


## 5.14 Advanced Menu

1. Advanced menu
2. Connection menu shows available COM ports and baud rates (19200 baud recommended)
3. Users menu – allows SoundSet users to be added, deleted or edited
4. Add User menu, requires Security level to be set
5. Security setting  
Basic  
Installer  
Advanced – maximum access
6. Log Session – will log the communication between the SoundSet and CIU for troubleshooting
7. SoundSet firmware release code

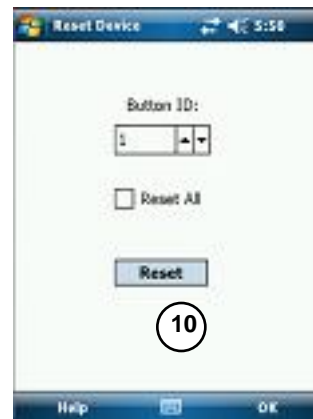
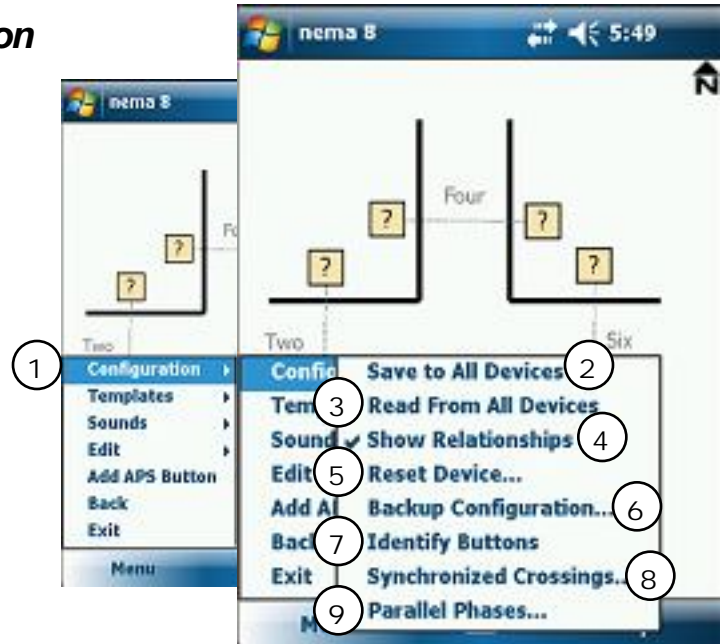
**NOTE:** for first time users, please contact Novax for a temporary ID and password at 1.866.977.4277 or 604.525.5644

Authentication is required for client protection.



## 5.15 Template Menu - Configuration

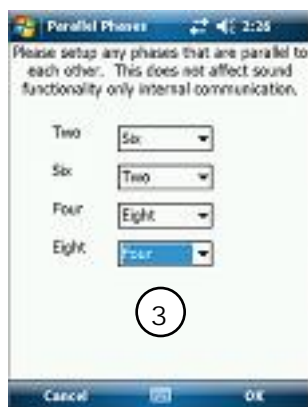
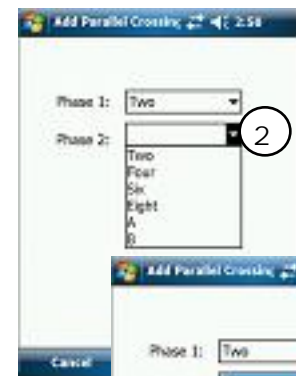
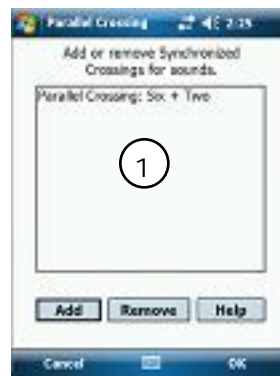
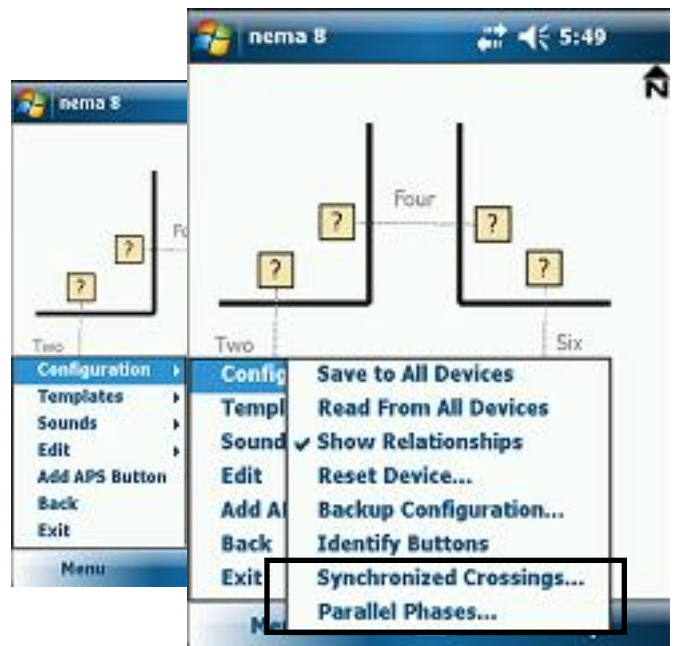
1. **Configuration** menu
2. **Save to All Devices**  
save current settings in SoundSet to all buttons
3. **Read from All Devices**  
read current settings from all buttons
4. **Show Relationships**  
see sec. 5.12, pg.21
5. **Reset Device**  
reset button to factory settings. Custom sounds will remain. **Note:** Button will cease playing sounds after this operation. Requires re-association
6. **Backup Configuration**  
saves intersection template to CIU for easy restoration to the SoundSet should it be lost or stolen.
7. **Identify Buttons**  
for easy identification of a button number. Causes all buttons to turn on the LED for 1 second then flash the number of times according to the button ID number
8. **Synchronized Crossings**  
synchronize parallel button phases to start with Walk. See sec. 5.12, pg.21
9. **Parallel Phases**  
identify any button phases that are parallel to each other. Used to optimize system fault management and self recovery
10. **Reset Device menu** – see above
11. **Backup menu**  
**Save Backup** will store the SoundSet intersection template to the CIU  
**Restore Backup** will recall the intersection template from the CIU
12. **Identify Buttons** – popup screen





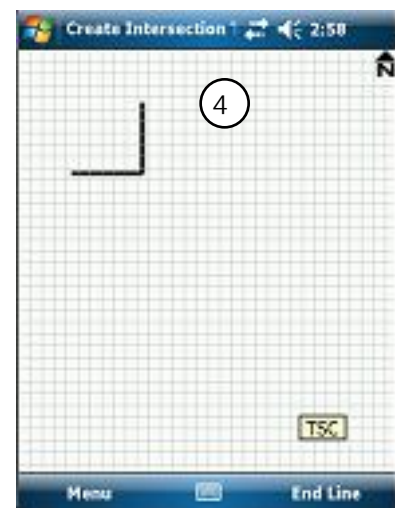
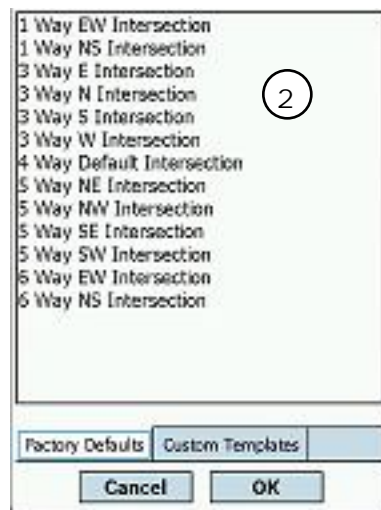
## 5.16 Template Menu – Configuration (continued)

1. **Synchronized Crossing** menu  
**Add** any two parallel button phases that you want to start the Walk sound only when both button phases have a Walk signal  
**Remove** any phases that you don't want synchronized crossing sounds
2. **Add Synchronized Crossing** menu – select the two crossings that are parallel in the drop down menus
3. **Parallel Phases** menu  
for each button phase select the parallel crossing (e.g. as shown below)



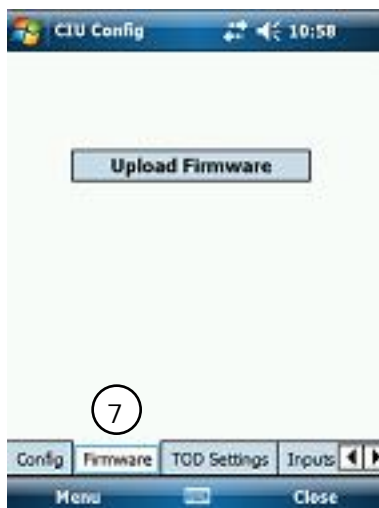
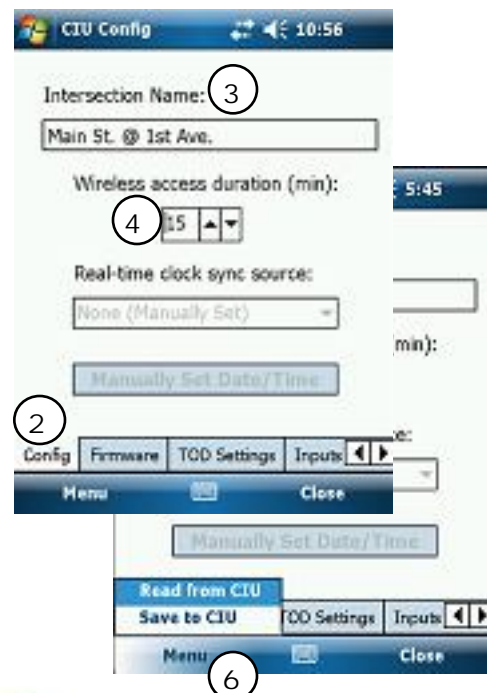
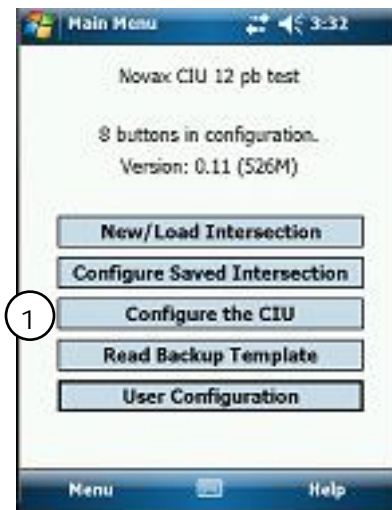
## 5.17 Template Menu – Templates

1. **Templates** menu
2. **Load Template** menu  
Select a Factory Default or Custom template.
3. **Save Template** popup  
Enter a filename to save the current intersection template and configuration data.
4. **Create Intersection** menu  
Draw your own custom intersection with this line drawing utility. Also see sec. 5.2, pg. 10 for details.



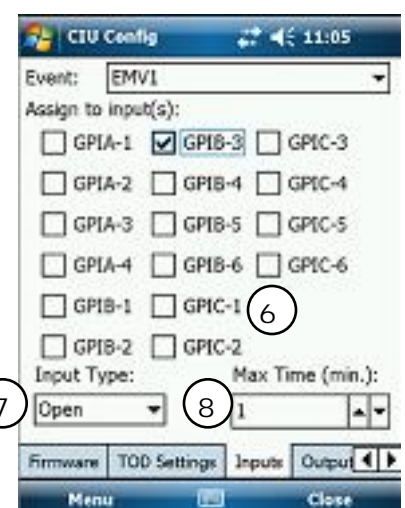
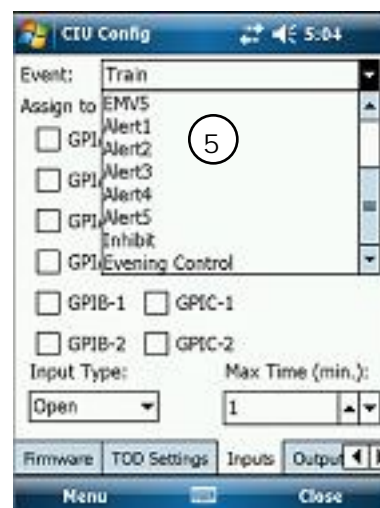
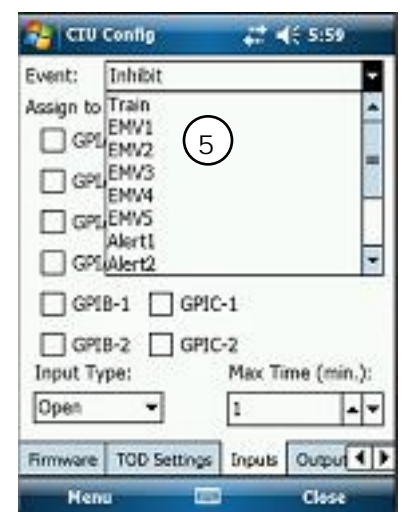
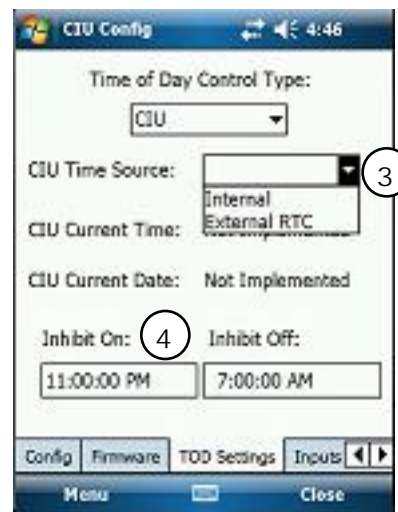
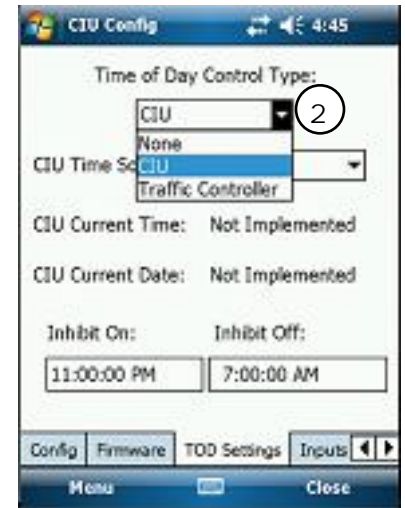
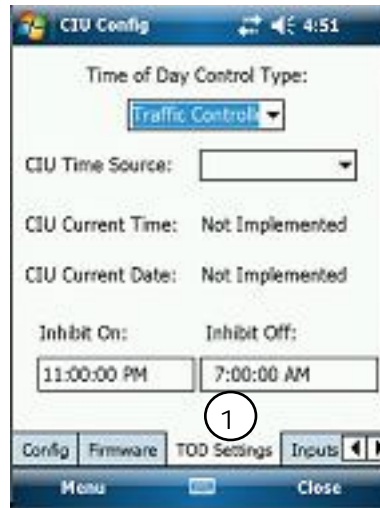
## 5.18 CIU Configuration – Wireless Access & Firmware Update

1. **Configure the CIU** menu
2. **Config** menu – please note that the Real-time clock is not currently enabled. Contact Novax for more information.
3. **Intersection name** or number should be entered
4. **Wireless Access duration** – this is the maximum amount of time the CIU will wait after the last communication with the SoundSet unit before turning off the Wireless Access. This can be set from 0 (no limit) to 30 minutes in one min. increments. Factory default is 15 minutes.
5. **Wireless Access** can be restarted by pressing the red button on the CIU
6. **Menu** – Read or Save settings from or to the CIU
7. **Firmware** menu – displays current firmware version and allows the CIU firmware to be updated. Updates available from Novax Industries Corp.



### 5.19 CIU Configuration – Time of Day control & Input Assignment

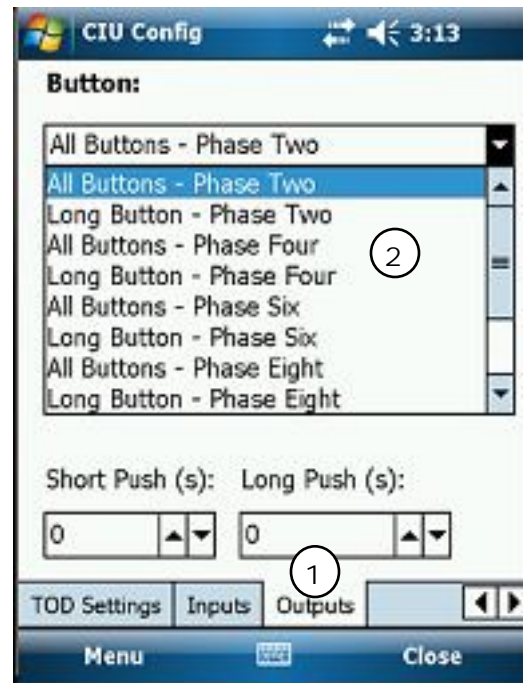
1. **Time of Day (TOD)** menu  
set whether the CIU will access  
time control information from  
the traffic signal controller  
input or internal clock  
NOTE: the internal clock  
operation may not be available  
on some CIU units. Please call  
Novax.
2. **Time of Day Control Type** -  
Traffic signal controller setting  
requires a hardware input from  
the controller.
3. **CIU Time Source** – select  
either Internal (CIU clock) or  
external (RTC device)
4. **Inhibit On/Off** time – can be  
set if the real time clock is  
used. Controls when the  
buttons are requested to enter  
Inhibit Mode. An inhibit  
response can configured for  
each button.  
See sec. 5.8, pg. 16
5. **Event** – available events;  
Train (1)  
Emergency Vehicle-EMV (5)  
Alert (5)  
Inhibit (1)  
Evening Control (1)
6. **Assign to Input** – select one  
or more inputs that will cause  
the event to be active. Inputs  
are Boolean 'OR'd'. Refer to  
sec. 9, pg. 37 for details.
7. **Input Type** - for each Event  
select the Open (voltage  
present) or Closed (voltage  
absent) type
8. **Max Time** – adjust the  
maximum time that the  
Train/EMV/Alert inputs will be  
allowed to effect the event.  
Range: 1-255 minutes.  
Does not apply to Inhibit or  
Evening Control events





## 5.20 CIU Configuration – Output Assignments & Wireless Button

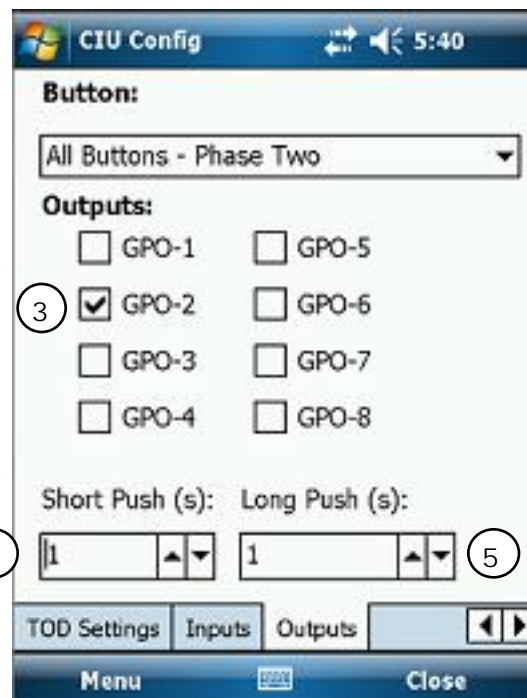
1. **Outputs** menu – assign button press (short and/or long) to one or more CIU button outputs. Set how the buttons will operate the outputs
2. **Button** events – can be selected by phase. Select either ALL button presses or just Long Button press.
3. **Outputs** – select which output(s) to assign the button event (above). \*
4. **Short Push** – set the number of seconds to close the output on a momentary button press. Range: 0 to 15 seconds
5. **Long Push** – set the number of seconds to close the output on an extended button press. Range: 0 to 15 seconds  
Also refer to sec. 5.8, pg. 16



### Application Note:

\* This is useful for extended Walk signal based on a Long Button press. Assign the Long Button press to a separate output.

This can also be used for a Wireless Button operation. When the CIU is installed in a traffic signal controller, the buttons will transmit their button press to the CIU over the Pedestrian Signals. The CIU can be set to output this button press to the traffic controller. No pedestrian button wires are required.



## 6 Installation

Prior to installation, please ensure that you have read the information in this section below to ensure best results.

There are many time saving features of the SoundSafe system that help reduce installation time and potential for errors. The sections below will help you determine what sections are most appropriate to you.

### 6.1 Default Initialization (for first time installers)

If this is your first time programming an intersection it is quite likely that you will need the City Traffic Engineer to approve the default settings of the SoundSafe buttons for use on street.

A powerful feature of the SoundSafe system is the ability to load standard default settings from the SoundSet programmer into the buttons. The SoundSet programmer comes factory programmed with a number of defaults for many standard intersection types.

The defaults should be reviewed by the City Traffic Engineer or authorized representative to ensure that they are inline with the City's guidelines for APS operation.

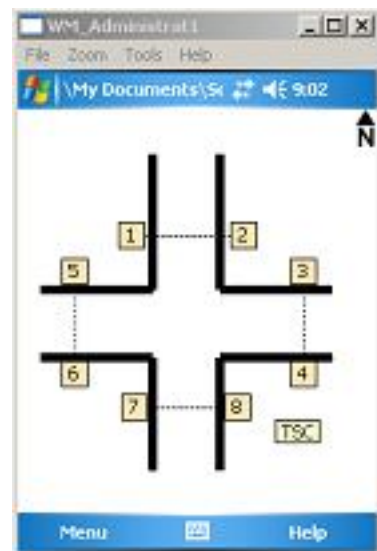
The default settings can be adjusted if required in the SoundSet or custom city defaults can be created and saved. Please refer to section 7 for details on the defaults.

### 6.2 Installation Considerations (all)

For new installations of the system, section 6.3 below provides a summary of the installation process step by step.

For existing installations of the system, section 6.4, pg. 32 provides a quick wiring reference of the button and sec. 6.5, pg. 33 for the CIU:

- ❖ Upgrade of an intersection with other APS products
- ❖ Re-installation of existing SoundSafe product

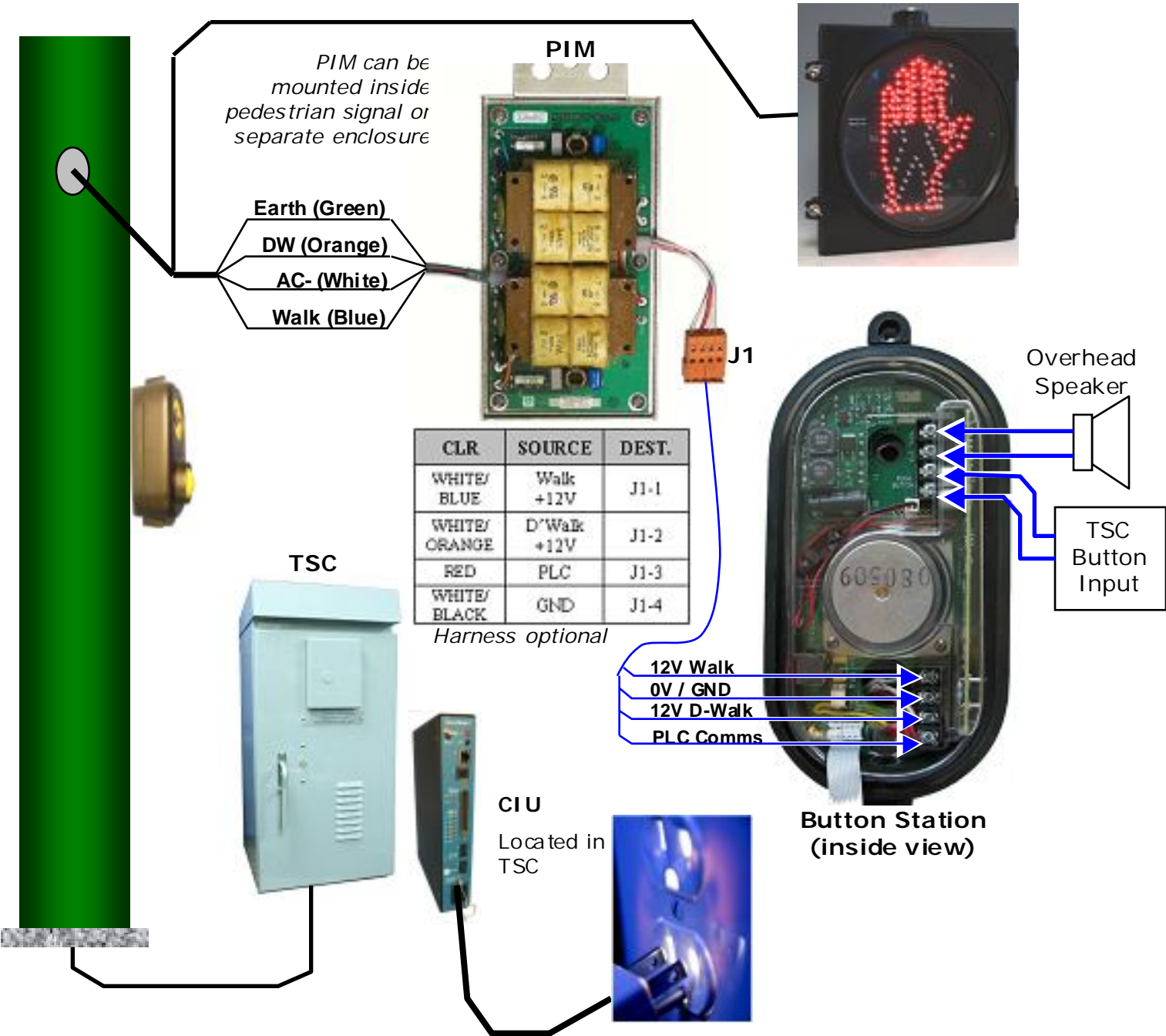


## **6.3 New Installation**

Installation Process:

- ❑ Carefully unpack the buttons & PIM
- ❑ Install and wire the Button and Power Interface Module (PIM) per MAN000260 SS Quick Install Guide. Included in each Button + PIM package. System wiring sec. 6.4
- ❑ Install the CIU into the traffic signal controller cabinet per sec. 6.5, pg. 33.
- ❑ Run SoundSet application on the Handheld device
- ❑ Load your custom intersection template, existing template or Create New Intersection. Refer to sec. 5.2, pg. 11.
- ❑ **IMPORTANT:** Place the TSC (traffic signal controller) icon at one corner of the intersection (you can also use the North arrow as a reference). This will help in determining your position relative to the button numbers and identify the button(s) you are adjusting. See sec. 5.2, pg. 11
- ❑ Place buttons on intersection
- ❑ Assign (PIN) button icons to on-street push buttons (10-second button press)
- ❑ Setup button attributes. Sec. 5.4, pg. 13 & sec. 5.5, pg. 14
- ❑ Save settings to buttons. Sec. 5.15, pg. 24
- ❑ Test Sound Level of button sounds (adjust if required). Sec. 5.7, pg. 16
- ❑ Save configuration by intersection name, number. Sec. 5.17, pg. 26

# 6.4 Button Station Installation – System Diagram



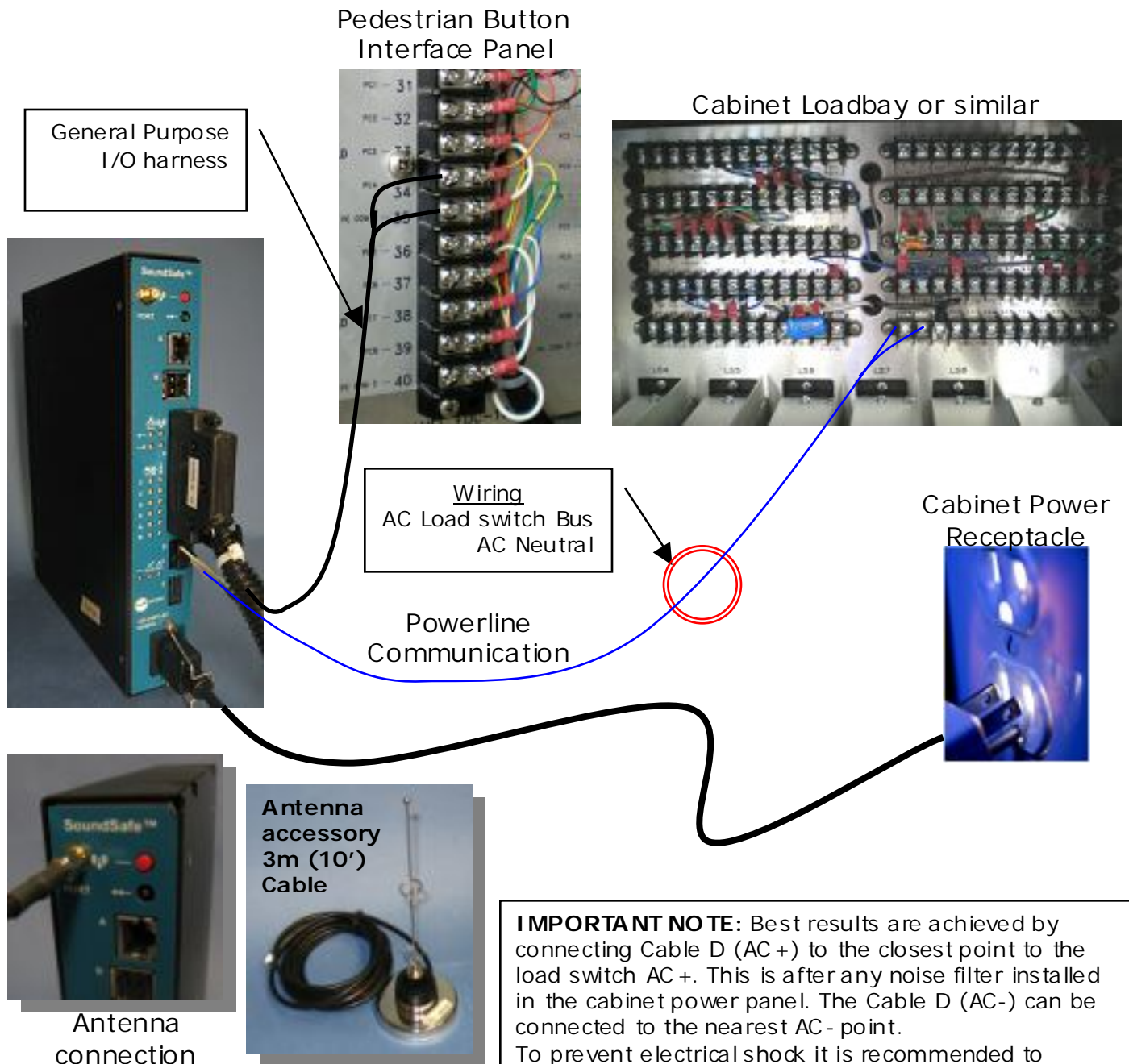


## 6.5 Communications Interface Unit (CIU) – System Wiring

The CIU requires two main components for installation: AC power plug and connection to the AC signal bus (i.e.; any AC Hot point on the output side of the cabinet transient filter).

These can be temporary connections if the CIU is not required to be left in the traffic controller.

If the Wireless Button operation is required the CIU can remain in the cabinet and be connected to the Pedestrian panel to provide Pedestrian button feedback without pedestrian button wires.

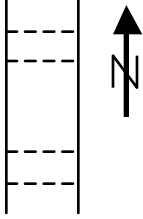
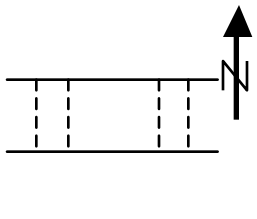
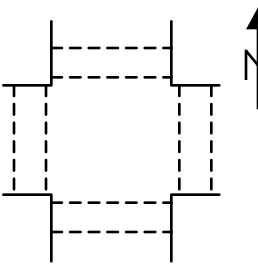
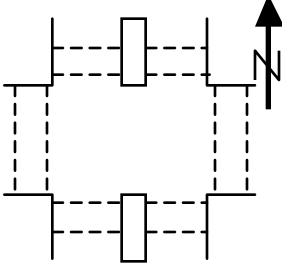
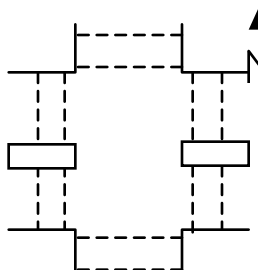
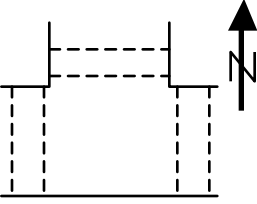
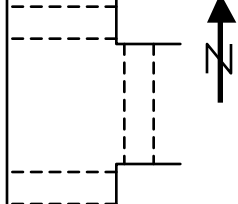
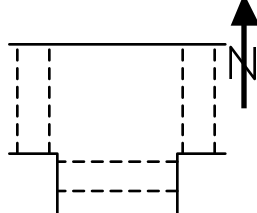
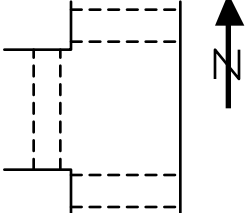


**IMPORTANT NOTE:** Best results are achieved by connecting Cable D (AC+) to the closest point to the load switch AC+. This is after any noise filter installed in the cabinet power panel. The Cable D (AC-) can be connected to the nearest AC- point.

To prevent electrical shock it is recommended to removed power from the load switch AC + prior to connection by placing the traffic controller into flash.

## 7 Factory Default Intersections


Refer to SoundSet application Sec. 5.2, pg. 11

Intersection Type	Description	Intersection Type	Description
	Pedestrian Crossing 2 to 4 APS units East – West Crossing		Pedestrian Crossing 2 to 4 APS units East – West Crossing
	4-way intersection 4 to 8 APS units N-S and E-W Crossings or Barnes Dance (Ped. Scramble)		4-way intersection with pedestrian refuge E-W cross. 8 to 12 APS units N-S and E-W Crossings
	4-way intersection with pedestrian refuge N-S cross. 8 to 12 APS units N-S and E-W Crossings		
	3-way 'T' NB intersection 2 to 6 APS units N-S and E-W Crossings		3-way 'T' EB intersection 2 to 6 APS units N-S and E-W Crossings
	3-way 'T' SB intersection 2 to 6 APS units N-S and E-W Crossings		3-way 'T' WB intersection 2 to 6 APS units N-S and E-W Crossings

## 8 Factory Default Sound Settings

#	Sound	Plg Order	Period (sec)	Push Button Speaker				Overhead Speaker				Speaker	Duration (sec)
				Min Level (dB)	Max Level (dB)	Evening Max Level (dB)	Gain (dB)	Min Level (dB)	Max Level (dB)	Evening Max Level (dB)	Gain (dB)		
		Note	1	2								3	4
<b>WALK Messages</b>													
1	Chip (E/V)	0	1	50	80	70	2	60	100	90	5	Button	0
2	Cuckoo (N/S)	0	1.5	50	80	70	2	60	100	90	5	Button	0
3	Can Melody (4 tone) (E/V)	0	1.2	50	80	70	2	60	100	90	5	Button	0
4	*Walk sign is on* (male)	0	3	50	80	70	2	50	80	70	2	Button	0
5	*Walk sign is on* (female)	0	3	50	80	70	2	50	80	70	2	Button	0
6	*Walk sign is on for all crossings* (male)	0	5	50	80	70	2	50	80	70	2	Button	0
7	*Walk sign is on for all crossings* (female)	0	5	50	80	70	2	50	80	70	2	Button	0
8	Pole Locator Tone	0	1	50	80	70	2	60	100	90	5	Button	0
9	Fast Click	0	0	50	80	70	2	60	100	90	5	Button	0
<b>PED CLEAR Messages</b>													
20	Beacon - Locator Tone	0	1	50	80	70	2	60	100	90	5	Both	0
21	Canadian Melody (3 tone)	0	1	50	80	70	2	60	100	80	5	OH	0
<b>SHORT PUSH BUTTON activated tones</b>													
30	*Wak* (male)	0	0	50	80	70	2	50	80	70	2	Button	0
31	*Wak* (female)	0	0	50	80	70	2	50	80	70	2	Button	0
32	Ped Ack tone	0	0	50	80	70	2	50	80	70	2	Button	0
33	Button Click	0	0	50	80	70	2	50	80	70	2	Button	0
<b>LONG PUSH BUTTON activated tones</b>													
40	*Wak* (male)	0	0	50	80	70	2	50	80	70	2	Button	0
41	*Wak* (female)	0	0	50	80	70	2	50	80	70	2	Button	0
42	Ped Ack tone	0	0	50	80	70	2	50	80	70	2	Button	0
43	Button Click	0	0	50	80	70	2	50	80	70	2	Button	0
44	Orientation Tone	0	1	60	110	90	7	60	110	90	7	OH	7
45	Ped Ack 2 tone	0	0	50	80	70	2	50	80	70	2	Button	0
<b>DON'T WALK messages</b>													
50	Pole Locator Tone	0	1	50	80	70	2	50	80	70	2	Button	0
<b>SPECIAL</b>													
60	EMV - "Emergency vehicle approaching"	0	3	60	100	90	5	60	100	90	5	Both	0
61	TRAIN 1 - "Train approaching"	0	2	60	100	90	5	60	100	90	5	Both	0
62	ALERT 1 - "Please clear intersection immediately"	0	3	60	100	90	5	60	100	90	5	Both	0
<b>MAINTENANCE</b>													
70	FAULT "Call for service"	1	30	50	80	70	2	50	80	70	2	Button	0
71	TEST TONE 1 (Installation)	0	1	50	80	70	2	60	100	90	5	Both	0

## 9 SoundSafe – Communications Interface Unit (CIU) Wiring Chart

 <b>NOVAX</b> INDUSTRIES CORPORATION		<b>Communications Interface Unit</b> PN: SNSAFE-CIU-ANT		
Physical I/O	Type (I/O)	CIU Port - Pin Assignment	Termination	
			NEMA	Type 170
Power Line Comm. (Line)	AC-IN	D-1	AC – Signal Buss	
Power Line Comm. (Neutral)	AC-IN	D-6	AC Neutral	
GPI-B Common	DC-COM1	C-1	Note 1	F or IP
GPI-B1	DC-IN	C-2	Note 1	F or IP
GPI-B2	DC-IN	C-3	Note 1	F or IP
GPI-B3	DC-IN	C-4	Note 1	F or IP
GPI-B4	DC-IN	C-20	Note 1	F or IP
GPI-B5	DC-IN	C-21	Note 1	F or IP
GPI-B6	DC-IN	C-22	Note 1	F or IP
GPI-C Common	DC-COM2	C-23	Note 1	F or IP
GPI-C1	DC-IN	C-5	Note 1	F or IP
GPI-C2	DC-IN	C-6	Note 1	F or IP
GPI-C3	DC-IN	C-7	Note 1	F or IP
GPI-C4	DC-IN	C-24	Note 1	F or IP
GPI-C5	DC-IN	C-25	Note 1	F or IP
GPI-C6	DC-IN	C-26	Note 1	F or IP
GPO-1	DC-OUT	C-8 & C-27	Note 2	F or IP
GPO-2	DC-OUT	C-9 & C-28	Note 2	F or IP
GPO-3	DC-OUT	C-10 & C-29	Note 2	F or IP
GPO-4	DC-OUT	C-11 & C-30	Note 2	F or IP
GPO-5	DC-OUT	C-12 & C-31	Note 2	F or IP
GPO-6	DC-OUT	C-13 & C-32	Note 2	F or IP
GPO-7	DC-OUT	C-14 & C-33	Note 2	F or IP
GPO-8	DC-OUT	C-15 & C-34	Note 2	F or IP
Fault-COM	Contact	D-2	Note 1	F or IP
Fault-NC	Contact	D-6	Note 1	F or IP
Fault-NO	Contact	D-1	Note 1	F or IP

Note 1: Loadbay DC Panel  
 Note 2: Loadbay DC Panel or Detector Panel  
 GPI = General Purpose Input  
 GPO = General Purpose Output  
 GPI-B & C: Active low input when common connected to cabinet DC V+ supply  
               Active high input when common connected to DC Common  
               Input active > 6Vdc, input inactive < 3Vdc (differential voltage)  
               Max. 28 VDC/AC, current draw=5mA at nominal 12Vdc  
 GPO: non-polarized solid-state switch, outputs closed when active  
               Max. current = 25 mA, Max voltage = 28VDC/AC

1.866.977.4277 / 604.525.5644  
 support@novax.com  
 MAN000265-00 CIU Wiring Card.doc